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# BEARLY TIMBER PERMIT

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Checklist Environmental Assessment



MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION  
Central Land Office – Bozeman Unit  
August 2019



## Environmental Assessment Checklist

**Project Name:** Bearly  
**Proposed Implementation Date:** August 2019  
**Proponent:** Bozeman Unit, Central Land Office, Montana DNRC  
**County:** Gallatin

### Type and Purpose of Action

**Description of Proposed Action:**

The Bozeman Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Bearly Timber Permit. The project is located approximately 6.5 air miles southeast of Bozeman, MT (refer to Attachments vicinity map A-1 and project map A-2) and includes the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
State Normal School	N2NE4 Section 1, T03S, R06E	80	24.4

Objectives of the project include:

- The primary objective would be to generate revenue to the trust beneficiary and improve the health, vigor and productivity of the forest stands.
- The desired future condition of this stand is a Douglas-fir cover type.
- Enhancement of aspen stands.
- Regeneration would be expected to occur naturally.

Proposed activities include:

Action	Quantity
<b>Proposed Harvest Activities</b>	<b># Acres</b>
Clearcut	
Seed Tree	
Shelterwood	16.4
Selection	8
Commercial Thinning	
Salvage	
<b>Total Treatment Acres</b>	<b>24.4</b>
<b>Proposed Forest Improvement Treatment</b>	<b># Acres</b>
Pre-commercial Thinning	
Planting	

Action	Quantity
<b>Proposed Road Activities</b>	<b># Miles</b>
New permanent road construction	
New temporary road construction	0.1
Road maintenance	0.2
Road reconstruction	
Road abandoned	
Road reclaimed	0.1
<b>Other Activities</b>	

<b>Duration of Activities:</b>	2-3 months
<b>Implementation Period:</b>	June 2019 through August 2019

The lands involved in this proposed project are held in trust by the State of Montana. (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and the DNRC are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for the beneficiary institutions (Section 77-1-202, MCA).

The DNRC would manage lands involved in this project in accordance with:

- The State Forest Land Management Plan (DNRC 1996),
- Administrative Rules for Forest Management (ARM 36.11.401 through 471),
- and all other applicable state and federal laws.

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## Project Development

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### SCOPING:

- DATE:
  - April 24, 2019
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website: <http://dnrc.mt.gov/PublicInterest/Notices/Default.asp>
  - Adjacent landowners, State lessee and interested parties.
- AGENCIES SCOPED:
  - MT FWP
  - Bozeman Ranger District
  - Gallatin County Commissioners
  - MT DNRC
- COMMENTS RECEIVED:
  - How many: Six comments were received.
  - Concerns: Proximity of project to homes/rental property, operational noise, air quality from slash burning, log truck traffic/dust control, aesthetics, insufficient scoping period, benefits of project, silvicultural prescription, conflict of interest with project access, effects to domestic water systems, increase in water yield,

- slope stability, erosion, timing of harvest activities, wildlife/threatened and endangered species/habitat.
- Results (how were concerns addressed): Where specific resource concerns were identified by the Project leader or DNRC specialists, those resources affected were analyzed and the effects are disclosed in the resources analysis within this document.

DNRC specialists were consulted, including: Patrick Rennie, Archaeologist; Jeff Schmalenberg, Resource Management and Planning Section; Ross Baty, Wildlife Biologist.

Internal and external issues and concerns were incorporated into project planning and design and will be implemented in associated contracts.

### **OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:** *(Conservation Easements, Army Corps of Engineers, road use permits, etc.)*

- **United States Fish & Wildlife Service** - DNRC is managing the habitats of threatened and endangered species on this project by implementing the Montana DNRC Forested Trust Lands HCP and the associated Incidental Take Permit that was issued by the United States Fish & Wildlife Service (USFWS) in February of 2012 under Section 10 of the Endangered Species Act. The HCP identifies specific conservation strategies for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout. This project complies with the HCP. The HCP can be found at [www.dnrc.mt.gov/HCP](http://www.dnrc.mt.gov/HCP).
- **Montana Department of Environmental Quality (DEQ)** - DNRC is classified as a major open burner by DEQ and is issued a permit from DEQ to conduct burning activities on state lands managed by DNRC. As a major open-burning permit holder, DNRC agrees to comply with the limitations and conditions of the permit.
- **Montana/Idaho Airshed Group** - The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit.

### **ALTERNATIVES CONSIDERED:**

**No-Action Alternative:** Under the no-action alternative, no harvest would occur and timber management for the proposed project area would be deferred indefinitely. An opportunity to access State land and generate revenue for the State Normal School and Montana Tech trusts would be lost.

**Action Alternative:** Under the action alternative, a commercial harvest of an estimated 125 MBF of overstocked and suppressed Douglas-fir sawtimber from 24.4 acres would occur. The

proposed project would utilize ~300 feet of existing road and require ~300 feet of new road on the private lands and ~300 feet of temporary, minimum standard new road construction on State lands to access the harvest area. Shelterwood and selection harvest treatments would be applied using ground-based harvest systems. Treatments would generate revenue to the State Normal School trust while improving the health, vigor and productivity of the forest stands. At project closure, new road construction and major skid trails on State lands would be physically closed.

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## Impacts on the Physical Environment

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Evaluation of the impacts on the No-Action and Action Alternatives including **direct, secondary, and cumulative** impacts on the Physical Environment.

### **VEGETATION:**

#### **Vegetation Existing Conditions:**

The State parcel is located on the northeast edge of the Gallatin Range. The landscape to the north and west is scattered patches of timber, sagebrush/grasslands and residential development. The landscape to the south and east is forested. Habitat type is Douglas fir/Ninebark. The cover type is Douglas-fir and the desired future condition of the conifer stands. Douglas-fir is a moderately shade tolerant species and is the indicated climax species and vigorous seral for the habitat type. The stand is included in fire group six. The fire disturbance regime was likely low to moderate severity fires occurring at 40 to 45-year interval, maintaining mature stands in a more open condition with an occasional stand replacing fire occurring in denser, overstocked areas. The absence of fire, in combination with encroachment, has resulted in overstocked and suppressed stands. These conditions have made the stands more susceptible to attack from insects and disease and created heavier fuel loadings than were historically present. Some minor harvesting occurred ~50-75 years ago. There is selective timber harvesting occurring on the adjacent private lands to the north of the proposed project.

Stands are exhibiting moderate vigor and reduced growth due mainly to too many mature trees per acre competing for the same limited resources. Compounded by droughty conditions over the last decade trees are stressed although still in relatively good health. Reducing the trees per acre by reducing the basal area in these stands would lessen the competition for resources while promoting a healthier environment and healthier trees more able to fend off attacks from insects and disease. Opening the crown canopy would create gaps to let in sunlight and aid in establishment of Douglas-fir regeneration. Additionally, reducing the trees per acre and creating space in the crown canopy would reduce fuel loadings within the stands and help reduce the intensity of a fire within the treated area.

A few larger relic trees are scattered within the stands but there are not enough to meet the DNRC old growth minimum criteria. Some small aspen stands are found along the stream and riparian areas. The Douglas fir is encroaching into the aspen and would eventually replace most of the aspen clone. No rare plants or cover types have been noted or observed within the project area.

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Noxious Weeds		x				x				x				
Rare Plants	x				x				x					
Vegetative community		x				x				x			No	1
Old Growth	x				x				x					
<b>Action</b>														
Noxious Weeds		x				x				x			Y	2
Rare Plants	x				x				x					
Vegetative community			x				x				x		Y	3
Old Growth	x				x				x					

*Comments:*

1. Stand overstocking would continue to reduce vigor and growth and leave stand at a greater risk to insect and disease attack and heavier fuel loadings and fire.
2. Mechanical treatment would increase ground disturbance and increase the potential spread of noxious weeds. In time, native species would be expected to out compete the invasive species and return the area to a more pre-harvest condition.
3. Treatments would remove ~50% to 55% (shelterwood/selection) of the sawtimber basal area, improving the health, vigor, and productivity of the stands. Douglas-fir leave trees and trees from adjacent stands would provide a seed source for regeneration and new timber stands in the long-term. Aspen stand treatments would remove all merchantable conifers within 50-75' of aspen colonies to reduce conifer encroachment and promote restoration of the aspen stands.

*Vegetation Mitigations:*

- All road and logging equipment would be power washed and inspected prior to being brought on-site.
- Project area would be monitored for noxious weeds during and following harvest and a weed treatment plan would be developed and implemented should noxious weed issues occur.
- Existing roads would be reseeded with site adapted grass to reduce the threat of noxious weed spread. Grass seed disturbed sites (new road construction, landings, slash piles, major skid trails) at the completion of the harvest units or after burning. Seed mix used would be appropriate for the site.
- Two large snags and snag recruits ( $\geq 21"$  dbh or next dbh class) per acre would be left where available. Cull live trees and cull snags would be retained where applicable. Sub-merchantable/non-merchantable trees and shrubs would be protected and retained where available. Retain visual screening cover in harvest units and riparian and wetland management zones. Emphasize the retention of downed logs of 15-inch diameter or larger where available. Retain live, healthy older trees and stand attributes suitable for old growth development where available and applicable.

- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and DNRC Forest Management Administrative Rules.

**SOIL DISTURBANCE AND PRODUCTIVITY:**

**Soil Disturbance and Productivity Existing Conditions:** Soils within the harvest area are predominately moderately deep and well drained, stony with clayey to loamy residuum and colluvium, derived from interbedded sandstone and shale. These soils tend to be less suitable for road activities and harvesting equipment due to low soil strength. Erosion, compaction and rutting are moderate to severe with certain features, i.e., slope and low soil strength, developing unfavorable operating conditions.

Overall, soils are indicated as moderately suited for roads due to low strength and for timber harvest due to slope and low strength. Soil rutting, compaction and erosion hazards are moderate. Some older slope instability was observed within the project area during field review.

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Physical Disturbance (Compaction and Displacement)	x				x				x					
Erosion	x				x				x					
Nutrient Cycling	x				x				x					
Slope Stability	x				x				x					
Soil Productivity	x				x				x					
<b>Action</b>														
Physical Disturbance (Compaction and Displacement)			x				x			x			Y	1,2
Erosion			x				x			x			Y	1,2
Nutrient Cycling			x				x			x			Y	1,2
Slope Stability	x				x				x					
Soil Productivity		x				x				x			Y	1,2

*Soil Comments:*

1 & 2. Detrimental soil impacts resulting from compaction, displacement and erosion would be expected on approximately 15% or less of the harvest unit and would be localized to primary skid trails and log landing sites. Project area nutrient pools are not expected to be affected if 5-10 tons of fine and coarse woody material is retained onsite for long-term soil organic matter supply and nutrient cycling. Woody material retention and managing operating periods in conjunction with limiting disturbance is expected to maintain long-term productivity.

A private road which accesses the State land would be upgraded to meet BMP's. New road on State would be physically closed and seeded. Main skid trails and constructed trails would be physically closed and seeded.

Previous harvest within the project area is limited with less than 1 percent detrimental soil disturbance. For an impact to soil resources to be cumulative they must overlap at least twice in both time and space. Considering this constraint, the proposed action presents a low-level risk of cumulative effects to soil resources in the project area.

*Soil Mitigations:*

- Limit equipment operations to periods when soils are dry (less than 20% soil moisture), frozen or snow covered (12 inches packed or 18 inches unconsolidated) to minimize soil compaction, rutting, vegetative disturbance and maintain drainage features. Control erosion by installing adequate drainage on roads and skid trails.
- Retain all fine litter as feasible and 5-10 tons/acre of large woody debris >3" diameter including 1 large log (>15 inches dbh) per acre greater than 20 feet long as practicable.
- Minimize soil disturbance by general skid trail planning and limit sustained tractor skidding to slopes ≤45% throughout entire project. Limit scarification to 30-40% of the harvest area. Slash would be left in the harvest units where feasible, and distributed on skid trails upon completion of use, for nutrient cycling, to control erosion and to provide shade and moisture retention.
- The locations and spacing of skid trails and landings shall be designated and approved prior to operations and skid trails would not be spaced less than 50 feet apart.
- Install adequate road drainage to control erosion concurrent with harvest activities, existing road and new construction. Provide effective sediment filtration along drainage features near crossing sites. Existing road would have BMP's upgraded, new road construction and major skid trails on State lands would be closed with slash and debris, and have adequate drainage provided. At sale closure, grass seed roads, skid trails (where needed) and landings with an appropriate seed mixture.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and applicable DNRC Forest Management Administrative Rules.

## **WATER QUALITY AND QUANTITY:**

**Water Quality and Quantity Existing Conditions:** Bear Creek, a class 1 stream, is located along the Bear Canyon County Road, which is the main access route to the harvest area. Bear Creek is listed on the Montana 303(d) list as an impaired stream with sedimentation and streamside alterations as probable causes of the listing. Bear Creek has a B-1 use classification for multiple use waters suitable for domestic use after conventional treatment, growth and propagation of cold-water fisheries, associated aquatic life and wildlife, and agricultural and industrial uses.

The upper portion of the county road is gravel and does not meet BMP's. The private access road to the harvest unit is located on the opposite side of the county road from Bear Creek. From the junction of the private road and the county road for ~1000 feet downstream, the county road is within the stream SMZ. The private road segment is ~300 feet and does not

meet BMP's and the first ~150 feet of the road is within Bear Creek SMZ. ~600 feet of temporary new road would be constructed on private and State lands to access the harvest unit. The new road and landing area would be located outside of the Riparian Management Zone (RMZ) of 80 feet.

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Water Quality		X				X				X				
Water Quantity	X				X				X					
<b>Action</b>														
Water Quality		X				X				X			Y	1,3
Water Quantity	X				X				X				Y	2

*Comments:*

1. The primary concerns regarding water quality is the potential for increased levels of erosion and subsequent sediment delivery to streams from roads. A high level of BMP effectiveness can be expected during and after implementation of the proposed actions on roads. Any potential change in water quality due to this project would likely be immeasurable.

Due to (1) the location of the private road, new road and harvest area on the opposite side of the county road from Bear Creek, (2) no activities proposed within the RMZ, (3) the type of silvicultural prescription and (4) implementation of additional mitigation measures and Forest Management BMP's within the proposed project, there is a low risk of direct, secondary or cumulative water quality impacts.

2. Forest stands within the project area are not a major influence on the hydrology and flow regimes of the streams draining the proposed harvest area. The proposed harvest is not expected to substantially decrease the levels of canopy interception or evapotranspiration potential over that likely to occur in these watersheds under no action. The levels of harvest proposed are also well below those cumulative levels associated with detrimental increases in water yield. Due to these factors, no direct, secondary or cumulative impacts to water quantity are anticipated under the proposed action.
3. Bear Creek would have an 80-foot RMZ established where applicable and no harvest in the RMZ is proposed. The new road and landing area would be located outside of the RMZ. These, along with additional mitigation measures and topographic shading, would provide adequate shade, woody debris recruitment and sediment filtration to protect adjacent and downstream beneficial uses.

**Water Quality & Quantity Mitigations:**

- Limit equipment operations to periods when soils are dry (less than 20% soil moisture), frozen or snow covered (12 inches packed or 18 inches unconsolidated).
- Upgrade the existing private road to meet Forestry Best Management Practices where practical. Construct new road on State lands to meet BMP's and at end of project install waterbars, physically closed with slash and debris and grass seed.
- Establish an 80-foot RMZ with no road or harvest activities within RMZ.
- Landing area would be located away from the RMZ.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and applicable DNRC Forest Management Administrative Rules.

**FISHERIES:**

**Fisheries Existing Conditions:** Bear Creek, a class 1 stream, is located along the Bear Canyon County Road which is the main access route to the harvest area. Bear Creek does have a cold-water fishery with Rainbow Trout, Rainbow X Cutthroat Trout, Brook Trout and Mottled Sculpin.

The upper portion of the county road is gravel, does not meet BMP's and contributes to direct sediment delivery to Bear Creek. The private access road to the harvest unit is located on the opposite side of the county road from Bear Creek. From the junction of the private road and the county road for ~1000 feet downstream, the county road is within the stream SMZ. The private road does not meet BMP's and the first ~150 feet of the road is within the stream SMZ.

**No-Action:** No direct or indirect impacts would occur to affected fish species or affected fisheries resources beyond those described in Fisheries Existing Conditions. Cumulative effects (other related past and present factors; other future, related actions; and any impacts described in Fisheries Existing Conditions) would continue to occur.

**Action Alternative (see Fisheries table below):**

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Sediment	X				X				X					
Flow Regimes	X				X				X					
Woody Debris	X				X				X					
Stream Shading	X				X				X					
Stream Temperature	X				X				X					
Connectivity	X				X				X					
Populations	X				X				X					
<b>Action</b>														
Sediment	X				X				X					

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number	
	Direct				Secondary				Cumulative						
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High			
Flow Regimes	X				X				X						
Woody Debris	X				X				X						
Stream Shading	X				X				X						
Stream Temperature	X				X				X						
Connectivity	X				X				X						
Populations	X				X				X						

*Comments:*

No direct, secondary or cumulative effects to fisheries resources are expected to occur due to the implementation of this project.

*Fisheries Mitigations:*

- Upgrade the existing private road to meet Forestry Best Management Practices where practical.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and applicable DNRC Forest Management Administrative Rules.

**WILDLIFE:**

**Wildlife Existing Conditions:** The project area is dominated by mature Douglas fir stands. Much of the existing forested area on the project area is present due to range encroachment during the last 100 years. Large live trees and some snags are found in the project area. Coarse woody debris amounts are generally low due to the age of the stands and community types. The project area occurs along a forest grassland ecotone providing habitat for many native song birds, raptors, big game species, and predators. Several prominent limestone rock outcrop features occur in the project area. Residential homes and major recreational accesses occur immediately south of the project area. Big game summer and winter habitats exist in the project area.

**No-Action:** No potential for disturbance to wildlife would be anticipated. No timber management activities would be conducted, thus no appreciable changes to existing habitats would occur. No changes in snag or large live tree availability would be anticipated. Continued maturation within existing stands could improve hiding cover and thermal cover for elk and mule deer, and other wildlife species that use forest cover to meet their life requisites. No direct effects would occur and negligible indirect, or cumulative effects would occur.

**Action Alternative (see Wildlife table below):**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number	
	Direct				Secondary				Cumulative						
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High			
<b>Threatened and Endangered Species</b>															
<b>Grizzly bear</b> <i>(Ursus arctos)</i> Habitat: Recovery areas, security from human activity		X			X				X					Y	1
<b>Canada lynx</b> <i>(Felix lynx)</i> Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone		X			X				X					Y	2
<b>Wolverine</b> <i>(Gulo gulo)</i>		X			X				X					Y	3
<b>Sensitive Species</b>															
<b>Bald eagle</b> <i>(Haliaeetus leucocephalus)</i> Habitat: Late-successional forest within 1 mile of open water	X				X				X						4
<b>Golden Eagle</b> <i>(Aquila chrysaetos)</i> Habitat: Prairies and open woodlands, cliffs and large trees	X				X				X						5
<b>Black-backed woodpecker</b> <i>(Picoides arcticus)</i> Habitat: Mature to old burned or beetle-infested forest	X				X				X						4
<b>Black-tailed prairie dog</b> <i>(Cynomys ludovicianus)</i> Habitat: grasslands, short-grass prairie, sagebrush semi-desert	X				X				X						4

Wildlife	Impact												Can Impact be Mitigated?	Comment Number		
	Direct				Secondary				Cumulative							
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High				
<b>Flammulated owl</b> ( <i>Otus flammeolus</i> ) Habitat: Late-successional ponderosa pine and Douglas-fir forest	X				X					X						4
<b>Gray Wolf</b> ( <i>Canis lupus</i> ) Habitat: Ample big game populations, security from human activities	X				X					X						6
<b>Harlequin duck</b> ( <i>Histrionicus histrionicus</i> ) Habitat: White-water streams, boulder and cobble substrates	X				X					X						4
<b>Northern bog lemming</b> ( <i>Synaptomys borealis</i> ) Habitat: Sphagnum meadows, bogs, fens with thick moss mats	X				X					X						4
<b>Mountain plover</b> ( <i>Charadrius montanus</i> ) Habitat: short-grass prairie & prairie dog towns	X				X					X						4
<b>Peregrine falcon</b> ( <i>Falco peregrinus</i> ) Habitat: Cliff features near open foraging areas and/or wetlands	X				X					X						7
<b>Pileated woodpecker</b> ( <i>Dryocopus pileatus</i> ) Habitat: Late-successional ponderosa pine and larch-fir forest	X				X					X						4
<b>Greater Sage grouse</b>	X				X					X						8

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<i>(Centrocercus urophasianus)</i> Habitat: sagebrush semi-desert														
<b>Townsend's big-eared bat</b> <i>(Plecotus townsendii)</i> Habitat: Caves, caverns, old mines	X				X				X					4
<b>Big Game Species</b>														
<b>Elk</b>		X				X				X			Y	9
<b>Mule/Whitetail Deer</b>		X				X				X			Y	9
<b>Black Bear</b>		X				X				X			Y	9
<b>Other Species or Issues</b>														
<b>Snags</b>		X				X				X			Y	10
<b>Large Live Trees</b>		X				X				X			Y	10

*Comments:*

1. The project area lies approximately 23 miles due north of the GYE grizzly bear recovery zone and occurs at the northerly edge of the occupied habitat boundary. There have been a number of confirmed grizzly bear sightings in the Bear Canyon/Mount Ellis area during the last 34 years. Given the frequency and types of observations, it is possible that a few grizzly bears may periodically use the general area as part of their home ranges during the non-denning seasons. There are currently high levels of recreational use that occur within the project area during all seasons along with residential houses and public roads, all of which may influence use of the area by grizzly bears. ~600 feet of new road would be constructed to minimum standard to access the proposed harvest unit and new road in the State parcel would be physically closed and made impassible at project completion. Stand density in harvest unit would be reduced by 50-55% with patchy cover retained for visual screening. The potential for any measurable increases in bear-human conflicts following the project activities are expected to be low. Adverse direct, indirect and cumulative impacts to bears as a result of this project are expected to be minor.
2. The project area occurs outside of any Critical Habitat boundary. Douglas fir forest cover type within the project area does not contain the high horizontal cover comprised of subalpine and spruce bows that provide habitat for snowshoe hares or coarse woody debris that is preferred for denning. Most habitat in the project area is likely best suited as travel habitat or matrix habitat that would facilitate movement, linkage, and provide habitat for secondary prey species such as red squirrels. Considering preferred lynx habitat is marginal within the proposed project area due to the lack of highly desirable

- habitat conditions for lynx and their primary prey, snowshoe hares, adverse direct, indirect or cumulative impacts to lynx as a result of this project are expected to be minor.
3. The proposed project area falls within the range of wolverines. Wolverines have been recently observed ~3 miles southwest of the proposed project area and periodic or transient use of the proposed project area could occur. High elevation areas greater than 7200 feet that maintain persistent snow late into the spring do not occur in the project area. Due to the size, nature, duration and location of the proposed project, activities associated with this proposal are expected to have minimal effect on wolverines.
  4. The project area is either out of the range of the normal distribution for this species or suitable habitat and/or key habitat structures are not present (e.g. documented nest sites or roosting structures etc.). No direct, indirect, or cumulative effects would be anticipated.
  5. Golden eagles have been observed within the project area, however no occupied nest sites within one mile of the project area have been documented. Proposed harvest activities are not likely to appreciably reduce or alter important preferred nest sites, perch sites or cliff features. No adverse direct, indirect, or cumulative effects to golden eagles would be anticipated.
  6. No known denning or rendezvous sites occur within 1 mile of the project area. However, wolves may occasionally use the project area and occasional sightings have been noted in the area. Some use of the project area by wolves could occasionally occur for breeding, hunting, or other life requirements. Big game species exist in the vicinity of the project area much of the year and some winter range exists in the project area. Any wolves using the area could be disturbed by proposed activities and are most sensitive at den and rendezvous sites, which are not known to occur in the project area or within 1 mile of the project area. Should either a den or rendezvous site be identified within 1 mile of the project area, a DNRC biologist would be consulted to determine if additional mitigations would be necessary. In the short-term, the proposed activities could lead to slight shifts in big game use, which could lead to a shift in wolf use of the area should they be present. Proposed activities would alter canopy closure, summer big game habitat, and big game winter range habitat, which could alter some big game use of the area but would not be expected to alter wolf prey abundance.
  7. Peregrine falcon observations have been made within the project area. Suitable cliff features for nesting may occur within 1 mile of the project area but no known nest sites occur within or near the project area. No direct, indirect or cumulative effects to peregrine falcons would be anticipated for the alternatives considered.
  8. The project area does not occur within "core" or "general habitat" areas identified by the Montana Sage Grouse Habitat Conservation Program. No occurrence records for greater sage grouse exist for the area. Also, extensive stands of sagebrush community types do not occur within or near the project area. Activities would be restricted to the forested portions of the section. Given the type and location of the project, no direct, indirect or cumulative effects to sage grouse would be anticipated.
  9. The project area falls within the distribution of elk, white-tailed deer, mule deer and black bear. The harvest unit is located within a deer wintering area. ~600 feet of temporary new road would be constructed and the duration of logging and road activities would be ~2 months. Hiding and thermal cover would be affected on approximately 24.4 acres, and logging disturbance could disturb and displace elk, deer and black bear, however,

displacement would likely be short term. Moderate quality thermal cover/snow intercept is present in most of the project area due to the moderate density of large, mature trees. Human access levels are presently moderate to high due to residential development, public roads and recreational access. No appreciable changes in long-term use of the project area by any of the species would be expected. Due to the scale and short duration of the proposed activities and implementation of mitigations measures, minor adverse direct, indirect, and cumulative effects to elk, deer and black bear would be anticipated.

10. Numerous large live trees and a few snags exist in the project area. While the action alternative would represent a reduction in available large trees on about 24.4 acres in the project area, the proposed activities would retain approximately 8-12 trees per acre greater than 15" in diameter where present; the continued presence of these resources in the project area could facilitate continued use by those wildlife species that use large trees and snags.

*Wildlife Mitigations:*

- A DNRC biologist would be consulted if a threatened or endangered species is encountered to determine if additional mitigations that are consistent with the administrative rules for managing threatened and endangered species (ARM 36.11.428 through 36.11.435) are needed.
- If a wolf den is found within 1 mile of active harvest units or within 0.5 miles of a rendezvous site, cease operations and consult a DNRC wildlife biologist for appropriate site-specific mitigations before resuming activities.
- Proposed project activities would not occur from April 1 - June 15.
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty.
- Contractors would adhere to food storage and sanitation requirements.
- Snags, snag recruits, and coarse woody debris would be managed according to ARM 36.11.411 through 36.11.414. Retain at least one large down log >15 inches dbh (or largest size available) and >20 feet long per acre where available. Sub-merchantable and non-merchantable trees and shrubs would be protected and retained for visual screening.
- Design harvest units to help with visual screening or topographic breaks that would hide a bear where available and practicable. Where opportunities exist, retain leave trees and retention areas in a clumped fashion to emulate natural disturbance patterns and reduce sight distances for wildlife.
- Major skid trails and new road would be physically closed within the project area on the State parcels at the completion of proposed activities.
- Implementation of SMZ/RMZ requirements to retain cover in association with SMZ/RMZ areas. Cover and habitat connectivity associated with riparian areas would not be altered.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and applicable DNRC Forest Management Administrative Rules.

**AIR QUALITY:**

Air Quality	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Smoke	X				X				X					
Dust	X				X				X					
<b>Action</b>														
Smoke		X				X				X			Y	1
Dust		X				X				X			Y	2

*Comments:*

1. Slash consisting of tree limbs and tops and other vegetative debris would be piled at landing areas during harvesting. Slash would ultimately be burned after harvesting operations have been completed. Burning would introduce particulate matter into the local airshed, temporarily affecting local air quality. Project area is located in Airshed 8A.
2. Dust may be created from logging operations and log hauling while on native and gravel surface roads. Due to minor amount of dust particulate and short duration of the project no mitigations for dust would be implemented.

*Air Quality Mitigations:*

- Burning within the project area would be short in duration and would be conducted when conditions favor good to excellent ventilation and smoke dispersion as determined by the Montana Department of Environmental Quality and the Montana/Idaho Airshed Group. DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days.
- Slash piles would be allowed to “cure” for 1-2 years to allow for optimum ignition and fuels consumption. Slash burning would occur in late fall/early winter and be of short duration.
- Dust would be monitored during project activities.

**ARCHAEOLOGICAL SITES / AESTHETICS / DEMANDS ON ENVIRONMENTAL RESOURCES:**

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
<b>No-Action</b>														
Historical or Archaeological Sites	X				X				X					
Aesthetics	X				X				X					
Demands on Environmental	X				X				X					

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Resources of Land, Water, or Energy														
<b>Action</b>														
Historical or Archaeological Sites	X				X				X					1
Aesthetics		X				X				X			Y	2
Demands on Environmental Resources of Land, Water, or Energy	X				X				X					

*Comments:*

1. A Class I (literature review) level review was conducted by the DNRC staff archaeologist for the area of potential effect (APE). This entailed inspection of project maps, DNRC's sites/site leads database, land use records, General Land Office Survey Plats, and control cards. The Class I search revealed that no cultural or paleontological resources have been identified in the APE. Areas adjoining the APE have been inventoried to Class III standards and have revealed no cultural materials. No additional archaeological investigative work will be conducted in response to this proposed permit because there is a low potential for adversely effecting Heritage Properties. However, if previously unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.
2. The proposed timber harvest would be visible to residences in the immediate project area and to recreationists using the New World Gulch trail head or traveling further south on Bear Creek road. Approximately 6% of the acreage on the State parcel would change from its current condition. The harvest unit would be more open post-harvest due to the stand prescription. The level of change to the landscape is expected to be low but could dominate the view to the casual observer. Regeneration would be expected in the open areas of the harvest unit and the existing leave trees would continue to grow, reducing the openness of the stands over time.

*Mitigations:*

- If unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.
- No harvest activities would occur within 200 feet of residences. When possible, healthy non-merchantable trees and other residual vegetation would be retained. Lethally damaged non-merchantable residual vegetation would be slashed.

**OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:** *List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.*

- State Forest Land Management Plan, 1996.
- Limestone West Timber Sale Final EIS; December 2018.
- Bear Canyon Timber Sale Final EA, August 2011.

## Impacts on the Human Population

Evaluation of the impacts on the proposed action including direct, secondary, and cumulative impacts on the Human Population.

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number	
	Direct				Secondary				Cumulative						
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High			
<b>No-Action</b>															
Health and Human Safety	X				X				X						
Industrial, Commercial and Agricultural Activities and Production	X				X				X						
Quantity and Distribution of Employment	X				X				X						
Local Tax Base and Tax Revenues	X				X				X						
Demand for Government Services	X				X				X						
Access To and Quality of Recreational and Wilderness Activities	X				X				X						
Density and Distribution of population and housing	X				X				X						
Social Structures and Mores	X				X				X						
Cultural Uniqueness and Diversity															
<b>Action</b>															
Health and Human Safety		X			X				X					Y	1
Industrial, Commercial and Agricultural Activities and Production	X				X				X						
Quantity and Distribution of Employment	X				X				X						
Local Tax Base and Tax Revenues	X				X				X						

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number	
	Direct				Secondary				Cumulative						
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High			
Demand for Government Services	X				X				X						
Access To and Quality of Recreational and Wilderness Activities		X				X			X					Y	2
Density and Distribution of population and housing	X				X				X						
Social Structures and Mores	X				X				X						
Cultural Uniqueness and Diversity	X				X				X						

*Comments:* 1. Noise from heavy equipment and log trucks related to harvest activities and log hauling would be heard during normal operational times. At times harvest activities would occur within 200 feet of residences. Normal risks are involved with the operation of log truck traffic on public roads.

2. The State parcel can be accessed from the Bear Canyon County Road allowing public recreation in the area. Public access to the harvest area would be restricted for the duration of the project. After the project has been completed, the harvest unit would be more open from the surrounding forest.

*Mitigations:*

- Harvest and hauling activities would be restricted to a 10-hour day with no equipment activities on weekends and major holidays. A no harvest buffer zone of a minimum of 200 feet would be designated between the harvest unit and residences. Haul routes would have warning signs posted indicating that log truck traffic is present in the area and safe speeds would be observed. Bear Canyon Road is a county road with posted speed limits. If necessary, a slower speed limit may be imposed under the timber harvest contract.
- Regeneration would be expected in the open areas of the harvest unit and the existing leave trees would continue to grow, reducing the openness of the stands over time.

Locally Adopted Environmental Plans and Goals: List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

- Bozeman Pass Zoning Regulation, 2006. No affect to project.

**Other Appropriate Social and Economic Circumstances:**

Costs, revenues and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimated stumpage is based on transactional data. This method uses current stumpage prices for

delivered sawtimber and associated sawtimber harvest costs to find a market value for the sawtimber stumpage to be sold.

**No Action:** The No Action alternative would not generate any return to the trust at this time.

**Action:** The timber harvest would generate additional revenue for the State Normal School. The estimated return to the trust for the proposed harvest is \$15,437.00 based on an estimated harvest of 125 thousand board feet (812.5 tons) and an overall stumpage value of \$19.00 per ton. The estimated return to Forest Improvement for the proposed harvest is \$446.87 based on an estimated harvest of 812.5 tons and an FI fee of \$0.55 per ton.

## References

- DNRC, 1996. State Forest Land Management Plan: Final environmental impact statement (and appendixes). Montana Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, Montana.
- DNRC, 2010. Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Plan: Final EIS, Volume II, Forest Management Bureau, Missoula, Montana.
- DNRC, 2011. DNRC compiled soils monitoring report on timber harvest projects, 2006-2010, 1st Edition. Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, MT.
- DNRC, 2016. Montana DNRC Trust Lands Forest Management Old Growth Handbook, 2016 revision. Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, MT.
- Pfister, Robert D., Kovalchic, Bernard L., Arno, Stephen F., Presby, Richard C. Forest Habitat Types of Montana, USDA Forest Service General Technical Report INT-34 Ogden Utah 1977
- MNHP. 2019. Montana Natural Heritage Program Environmental Summary Query and Species Occurrence Report. March 2019.

**Does the proposed action involve potential risks or adverse effects that are uncertain but extremely harmful if they were to occur?**

No

**Does the proposed action have impacts that are individually minor, but cumulatively significant or potentially significant?**

No

**Environmental Assessment Checklist Prepared By:**

**Name: Chuck Barone**  
**Title: Bozeman Unit Forester**

Date: 08/07/2019

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## Finding

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### MEASURES RECOMMENDED TO MITIGATE POTENTIAL IMPACTS

- 1) Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP, applicable DNRC Forest Management Administrative Rules, the Montana/Idaho Airshed Group and the Montana Department of Environmental Quality.
- 2) When working off of established roads, limit equipment operations to periods when soils are dry (less than 20% soil moisture), frozen to a depth of 4 inches or a depth that will support machine operations (whichever is greater) or snow covered to a depth of 18 inches or a depth that will prevent compaction, rutting, or displacement (whichever is greater) to minimize soil compaction, rutting, vegetative disturbance and maintain drainage features. Control erosion by installing adequate drainage on roads and skid trails.
- 3) The Forest Officer shall approve a plan for felling, yarding and landing location in each harvest unit prior to the start of operations in the unit. The locations and spacing of skid trails and landings shall be designated and approved by the Forest Officer prior to operations and skid trails will not be spaced less than 50 feet. Retain all fine litter as feasible and 5-10 tons/acre of large woody debris >3" diameter. Minimize soil disturbance by general skid trail planning and limit sustained tractor skidding to slopes ≤45%. Limit scarification to 30-40% of the harvest area. Slash would be left in the harvest units where feasible, and distributed on main skid trails upon completion of use, for nutrient cycling, to control erosion and to provide shade and protection for seedlings.
- 4) Install adequate road drainage to control erosion concurrent with harvest activities. Provide effective sediment filtration along drainage features near crossing sites. Major skid trails on State lands would be closed with slash and debris and/or barriers, and have adequate drainage provided.
- 5) All road and logging equipment would be power washed and inspected prior to being brought on site. Sale area would be monitored for weeds following harvest and a treatment plan would be developed should noxious weed issues occur.
- 6) At sale closure, grass seed roads, skid trails (where needed) and landings with an appropriate seed mixture.
- 7) Two snags and two snag recruits per acre, of the largest diameter class, would be retained where available and applicable. Cull live trees and cull snags would be retained where applicable.
- 8) Sub-merchantable and non-merchantable trees and shrubs would be protected and retained where applicable. Retain patches of advanced regeneration of shade-tolerant trees (grand fir, subalpine fir, and spruce), as a component of commercial harvest prescriptions. Cover of the retained patches should not exceed 10 percent of the stand area.
- 9) Emphasize the retention of downed logs of 15-inch diameter and 20-feet long or larger per acre where available.

- 10) On blowdown salvage projects, 1 percent of the blowdown area would be left unsalvaged. The material would preferably be retained in a nonlinear patch or patches.
- 11) Retain live, healthy older trees and stand attributes suitable for old growth development where available and applicable.
- 12) A no harvest buffer zone of a minimum of 200 feet would be designated between the harvest unit and residences. Harvest and hauling activities would be restricted to a 10-hour day with no equipment activities on weekends and major holidays. Warning signs would be posted indicating that log truck traffic is present in the area.
- 13) Contact DNRC wildlife biologist should any threatened or endangered species be encountered within the proposed project area. If a wolf den is found within 1 mile of active harvest units or within 0.5 miles of a rendezvous site, cease operations and consult a DNRC wildlife biologist for appropriate site-specific mitigations before resuming activities. If unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.
- 14) Human or pet food, livestock food, garbage, and other attractants would be stored in a bear resistant manner. Burnable attractants (such as food leftovers or bacon grease) would not be buried, discarded, or burned in an open campfire. Written brochures that describe risks and concerns regarding humans living and working in bear habitat would be provided to contractors and their employees conducting forest management activities prior to start of operations.
- 15) Clearcut and seed tree cutting units would be designed in a manner that requires any point within a unit to be within 600 feet of visual screening cover in at least one direction.
- 16) Forest management activities would be prohibited during the spring period of April 1 through June 15 to minimize risk of disturbance to grizzly bears, calving areas and nesting birds.
- 17) DNRC employees and contractors and their employees would be prohibited from carrying firearms while on duty, unless the person is specifically authorized to carry a firearm under DNRC Policy 3-0621.
- 18) Slash piles would be allowed to "cure" for 1-2 years to allow for optimum ignition and fuels consumption. Slash burning would occur in late fall/early winter, be of short duration and when approved conditions are good to excellent for ventilation and smoke dispersion. Dust would be monitored during project activities.

### **Alternative Selected**

**Action Alternative:** Under the action alternative, a commercial harvest of an estimated 125 MBF of overstocked and suppressed Douglas-fir sawtimber from 24.4 acres would occur. The proposed project would utilize ~300 feet of existing road and require ~300 feet of new road on the private lands and ~300 feet of temporary, minimum standard new road construction on State lands to access the harvest area. Shelterwood and selection harvest treatments would be applied using ground-based harvest systems. Treatments would generate revenue to the State

Normal School trust while improving the health, vigor and productivity of the forest stands. At project closure, new road construction and major skid trails on State lands would be physically closed.

**Significance of Potential Impacts**

I have determined that none of the anticipated environmental impacts outlined in the EA are significant according to the criteria outlined in *ARM 36.2.524*. I find that no impacts are regarded as severe, enduring, geographically widespread, or frequent. Further, I find that the quantity and quality of various resources, including any that may be considered unique or fragile, will not be adversely affected to a significant degree. I find no precedent for future actions that would cause significant impacts, and I find no conflict with local, State, or Federal laws, requirements, or formal plans. In summary, I find that the identified adverse impacts will be avoided, controlled, or mitigated by the design of the project to the extent that the impacts are not significant.

**Need for Further Environmental Analysis**

EIS

More Detailed EA

No Further Analysis

**Environmental Assessment Checklist Approved By:**

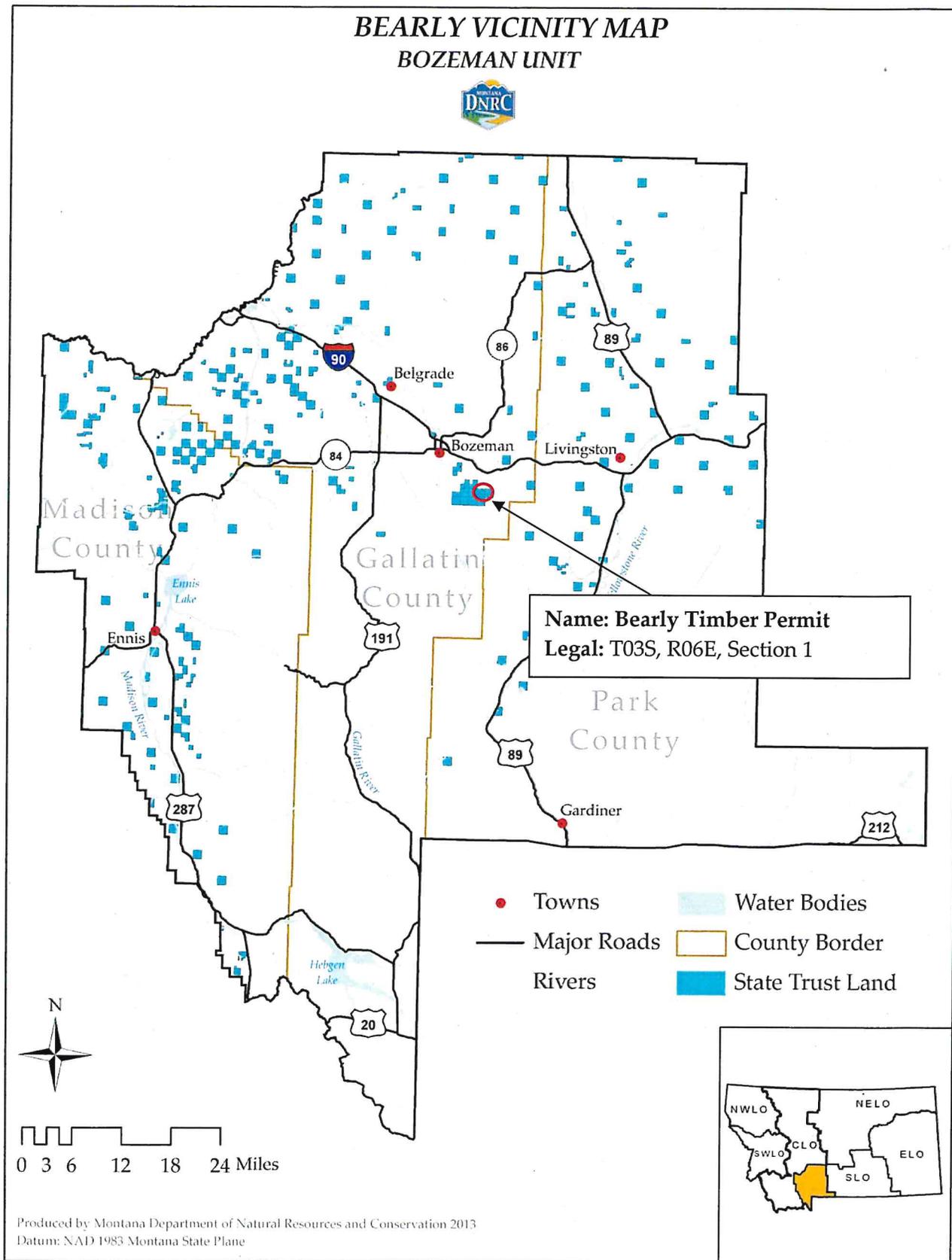
**Name: Craig Campbell**

**Title: Bozeman Unit Manager**

**Date: August 9, 2019**

**Signature: Craig Campbell/s/** 

A-1: Timber Permit Vicinity Map



A-2: Timber Permit Harvest Units



ATTACHMENT A - Site Map  
Bearly Timber Permit  
Section 1-T3S-R6E, Gallatin County, MT

